

REMARKS

Applicant respectfully requests reconsideration and allowance of all of the claims of the application. The status of the claims is as follows:

- Claims 1, 4-9, 14-64, 68, 70-76 are currently pending.
- Claims 65-67 were canceled in a previous response without prejudice to or disclaimer of the subject matter recited therein.
- Claims 2, 3, 10-13 and 69 are canceled herein without prejudice to or disclaimer of the subject matter recited therein.
- Claims 1, 4-6, 14-16, 22, 24, 43 and 68 are amended herein.
- New claims 74-76 are added herein.

Support for the amendments to claims 1, 4-6, 14-16, 22, 43 and 68 as well as new claims 74-76 is found in the specification, as originally filed, at least at pages 5, 24 and 32. The amendments submitted herein do not introduce any new matter.

Cited Document

The following document has been applied to reject one or more claims of the Application:

- **Westcott:** Westcott et al, U.S. Patent No. 5,341,463.

Claims 1, 4-9, 14-64, 68, 70-73 are Non-Obvious over Westcott

Claims 1, 4-9, 14-64, 68, 70-73 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Westcott. Applicant respectfully requests reconsideration in light of the amendments presented herein.

Claims 2 and 3 are canceled herein with the subject matter recited therein incorporated into independent claim 1. Claim 69 is canceled herein with the subject matter recited therein incorporated into independent claim 68. As such, Application shall address these features relative to the cited references herein below.

Independent Claim 1

Claim 1, as amended herein, recites (added text underlined):

A computer-implemented method comprising:

providing a first texture map for a first portion of a three-dimensional surface, the first texture map being associated with a first mapping technique;

providing a second texture map for a second portion of the three-dimensional surface, the second texture map being associated with a second mapping technique that is different from the first mapping technique;

providing a third texture map for a third portion of the three-dimensional surface, the third texture map being associated with the second mapping technique; and

generating a multiple-component map set that includes at least a portion of the first, the second and third texture maps, the first texture map including cylindrical projection information, and the second texture map including azimuthal projection information, the third texture map including azimuthal projection information, and the first portion separating the second portion and third portion.

Applicant respectfully submits Westcott fails to teach or suggest, at least: "generating a multiple-component map set that includes at least a portion of the first, the second and third texture map, the first texture map including cylindrical projection information, and the second texture map including azimuthal projection information, the

third texture map including azimuthal projection information, and the first portion separating the second portion and third portion.”

Wescott is directed to “a method and means for producing arbitrary displays of data such as world maps and other displays from a source data from which closed polygons can be extracted to give a generalized display of , for example, world features” (Wescott, col. 1, lines 52-58). The stated concern is to “display world maps from digital data, as well as to present user specific overlay data that are totally adaptable with regard to center point and area coverage” (Wescott, col. 1, lines 40-42).

As illustrated in FIG. 7, Wescott’s software provides a user perspective view of the earth when the user turns on the perspective function in the “Map Projection Features menu” (Wescott, col. 6 lines 55-65). There are “19 available map projections [that] may be selected by the user and presented for any chosen center point and scale on the earth” (Wescott, col. 6 lines 55-65). FIGS. 12 through 33 show the possible capabilities of the software (Wescott, col. 7 lines 32-33). For example, FIG. 15 shows an equirectangular map of the world; FIG. 33 shows a polar orthographic projection centered at the South Pole (Wescott, FIG. 15 and 33).

Wescott, at col. 8, line 58 to col. 9, line 17, describes that “[t]he conversion of geographic and display coordinates is performed by the subroutines which contain a basis set of polyline mapping routines, one for each of the projections.” Wescott goes on, at col. 10, lines 5-18, to describe three major categories of map projections including azimuthal, cylindrical and conic projections. Wescott goes on, at col. 1100, lines 26-36, to list projections that can be applied in “projecting geographical coordinates onto a defined map display”.

However, Wescott is silent as to any disclosure of the foregoing features. Specifically, Wescott is silent as to the “generating a multiple-component map set that includes at least a portion of **the first, the second and third texture maps**,” as recited in amended claim 1 (emphasis added). More specifically, Wescott is silent as to the disclosure of “a multiple-component map set” comprising “the first texture map including **cylindrical** projection information, and the second texture map including **azimuthal** projection information, the third texture map including **azimuthal** projection information,” as recited in amended claim 1 (emphasis added). In particular, Wescott is silent as to any disclosure of “**the first portion separating the second portion and third portion**,” as recited in amended claim 1 (emphasis added).

For at least the reasons presented herein, Wescott does not teach or suggest all of the features of claim 1. Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claim 1 under 35 U.S.C. § 103(a).

Dependent Claims 4-21, 71 and 72

Claims 4-21, 71 and 72 ultimately depend from independent claim 1. As discussed above, claim 1 is allowable over the cited documents. Therefore, claims 4-21, 71 and 72 are also allowable over the cited documents of record for at least their dependency from an allowable base claim, and for the additional features that each recites.

For example, in rejecting claims 6 and 7, the Office asserts that “the details of projections [] are widely known in the art (official notice) and used in the claimed projections are mere design choice” (Office Action, p. 4). Applicant respectfully

traverses this Office Notice, and instead submits that it would not have been obvious to one ordinary skill at the time of the invention that:

“the first and second texture maps are stretch-invariant and have a sampling requirement definable as:

$$M_{capped}(\theta) \equiv M_{equi}(\theta) + M_{plane}(\pi/2 - \theta) = 4\theta^2 + 2\pi(\pi/2 - \theta)$$

where θ is a transition angle from a defined point on the surface to where the second texture map is adjacent to the first texture map,” as recited in claim 6, and

“wherein θ is equal to about 45°” as recited in claim 7.

Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claims 4-21, 71 and 72 under 35 U.S.C. § 103(a).

Independent Claim 22

Claim 22, as amended herein, recites (added text underlined):

A computer storage device providing computer instructions suitable for performing steps comprising:

providing a first texture map for a first portion of a three-dimensional surface, the first texture map being associated with a first mapping technique;

providing a second texture map for a second portion of the three-dimensional surface, the second texture map being associated with a second mapping technique that is different from the first mapping technique; and

generating a multiple-component map set that includes at least a portion of the first and the second texture map, the first texture map including at least one of cylindrical projection information or Mercator projection information for the first portion, and the second texture map

including at least one of azimuthal projection information or stereographic projection information for the second portion.

For reasons similar to those given for claim 1 above, claim 22 is allowable over Wescott. For example, Wescott fails to teach or suggest, at least, “generating a multiple-component map set that includes at least a portion of the first and the second texture map, the first texture map including at least one of cylindrical projection information or Mercator projection information for the first portion, and the second texture map including at least one of azimuthal projection information or stereographic projection information for the second portion” as recited in amended claim 22. Specifically, Wescott is silent as to any disclosure of these features.

For at least the reasons presented herein, Wescott does not teach or suggest all of the features of claim 22. Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claim 22 under 35 U.S.C. § 103(a).

Dependent Claims 23-42, 72 and 73

Claims 23-42, 72 and 73 ultimately depend from independent claim 22. As discussed above, claim 22 is allowable over the cited documents. Therefore, claims 23-42, 72 and 73 are also allowable over the cited documents of record for at least their dependency from an allowable base claim, and for the additional features that each recites.

For example, claim 24 recited in part (emphasis added): “**wherein the multiple-component map set is a three-component map set, wherein the second and third portion are two poles, the first portion is the area between the second and third portions.**” The Office provides no factual support to show that Wescott teaches or

suggests these features. No specific passage of Wescott has been cited in the Office Action regarding these features of claim 24. Therefore, Applicant respectfully submits that Wescott has not been shown to teach or suggest these features.

Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claims 23-42, 72 and 73 under 35 U.S.C. § 103(a).

Independent Claim 43

Claim 43, as amended herein, recites (added text underlined):

A computing device comprising:

one or more processors;

memory to store computer-program instructions executable by the one or more processors; and

logic module configured to:

provide a first texture map for a first portion of a three-dimensional surface, the first texture map being associated with a first mapping technique and a second texture map for a second portion of the three-dimensional surface, the second texture map being associated with a second mapping technique that is different from the first mapping technique, and

output graphically displayable information based on at least a portion of the first and second texture maps, the first texture map including at least one of cylindrical projection information or Mercator projection information for the first portion, and the second texture map including at least one of azimuthal projection information or stereographic projection information for the second portion.

For reasons similar to those given for claim 1 above, claim 43 is allowable over Wescott. For example, Wescott fails to teach or suggest, at least, "the logic module

being further configured to: . . . output graphically displayable information based on at least a portion of the first and second texture maps, the first texture map including at least one of cylindrical projection information or Mercator projection information for the first portion, and the second texture map including at least one of azimuthal projection information or stereographic projection information for the second portion” as recited in amended claim 43. Specifically, Wescott is silent as to any disclosure of these features.

For at least the reasons presented herein, Wescott does not teach or suggest all of the features of claim 43. Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claim 43 under 35 U.S.C. § 103(a).

Dependent Claims 44-64

Claims 44-64 ultimately depend from independent claim 43. As discussed above, claim 43 is allowable over the cited documents. Therefore, claims 44-64 are also allowable over the cited documents of record for at least their dependency from an allowable base claim, and for the additional features that each recites.

Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claims 44-64 under 35 U.S.C. § 103(a).

Independent Claim 68

Claim 68, as amended, recites (added text underlined):

A computer-implemented method for generating a low-distortion area-preserving map for use in stochastic ray tracing computer generated graphics, the method comprising:

projecting sampling patterns onto a three-dimensional surface, the projecting the sampling patterns includes a projection, $(u, v) = S^{-1}(x, y, z)$, that is defined by the composition of at least two area-preserving bijections, the at least two area preserving bijections including a first area-preserving bijection that is a mapping from a hemisphere to a disk $(u, v) = (x, y)/\sqrt{1+z}$, and a second area-preserving bijection being a mapping from a disk to a half disk $(\hat{r}, \hat{\theta}) = (r, \theta/2)$; and

projecting the resulting three-dimensional surface samples into two-dimensional histogram bins.

For reasons similar to those given for claim 1 above, claim 68 is allowable over Wescott. For example, Wescott fails to teach or suggest, at least, “the at least two area preserving bijections including a first area-preserving bijection that is a mapping from a hemisphere to a disk $(u, v) = (x, y)/\sqrt{1+z}$, and a second area-preserving bijection being a mapping from a disk to a half disk $(\hat{r}, \hat{\theta}) = (r, \theta/2)$ ” as recited in amended claim 68. Specifically, Wescott is silent as to any disclosure of these features.

For at least the reasons presented herein, Wescott does not teach or suggest all of the features of claim 68. Accordingly, Applicant respectfully requests that the Office withdraw the rejection of claim 68 under 35 U.S.C. § 103(a).

New Claims 74-76 are Patentable over Wescott

New claims 74-76 are patentable over Wescott. Wescott fails to teach or suggest, at least: “providing a second texture map for a second portion of the three-dimensional surface, the second texture map being associated with a second mapping technique that is different from the first mapping technique, the first texture map including Mercator projection information for the first portion, and the second texture

map including stereographic projection information for the second portion; providing a third texture map for a third portion of the three-dimensional surface, the third texture map being associated with the second mapping technique, and the third texture map including stereographic projection information for the third portion; and generating a multiple-component map set that includes at least a portion of the first, the second and the third texture map,” as recited in claim 74. Therefore, independent claim 74 is allowable over Wescott.

Claims 75 and 76 are also allowable over Wescott for at least their dependency from an allowable base claim, and for the additional features that each recites.

Conclusion

For at least the foregoing reasons, all pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application.

If any issues remain that would prevent allowance of this application, **Applicant requests that the Examiner contact the undersigned representative before issuing a subsequent Action.**

Respectfully Submitted,

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